

# Labour Supply and the Extensive Margin

## *Supplementary material*

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### 1 Data sources and comparability issues

More details on the empirical analysis can be found in Blundell, Bozio and Laroque (2011). Here we present the data that we have used and discuss their comparability across countries. For all three countries, the data come from Labour Force surveys or their equivalent. For France we use the entire series of the French Labour survey, the Enquête Emploi (EE), for the years 1968 to 2008. For the UK we use both the Labour Force Survey (LFS) for the years 1975 to 2008, supplemented by the older Family expenditure survey (FES) which covers the years 1968 to 2008. US data come from various editions of the Current Population Survey (CPS) for the years 1968 to 2008.<sup>1</sup>

The first point to note is the difference in coverage of the three surveys that might impact measures of employment rates: in all three surveys, the sample is the non-institutional population. This means that penal and mental facilities are excluded from the sample. The gap in incarceration rates between Europe and the US has increased over the last ten years and is very much concentrated in younger individuals. No correction has been provided for this fact. Second, the CPS is supposed to cover the civilian population and therefore excludes the Armed forces. This is not an issue for employment rates as we can identify the Armed Forces in the population but information on hours of work is not available for this group.<sup>2</sup> A third point worth to mention is the question of weights. Each national office uses a different methodology to compute weights - and they matter. For instance, the weights used by the US Bureau of Labor Statistics (BLS) are different from the weights recommended by IPUMS.

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<sup>1</sup>We use the data from the University of Minnesota, the IUPMS-CPS, available at <http://cps.ipums.org/cps/>. The LFS is available through UK data archive, while the EE is available through the Centre Quetelet, La Statistique publique and INSEE.

<sup>2</sup>This poses a problem of comparability of hours worked and employment rates which might not be on the same sample. Armed Forces in the CPS represent 0.6% of the 1968-2008 sample.

The BLS weights give higher employment rates for more recent years than the person weights recommended by IPUMS.

## 2 Measuring labour supply

### 2.1 The extensive margin

Labour Force surveys have relatively good quality data to measure participation to the labour force as they are primarily designed for this objective. Comparability across countries is also considered reliable as there has been efforts from an early stage to harmonize standards and definition. Recommendations from the International Labor Organization (ILO) have been in place since the first convention of 1962, followed by later improvements. The standard definition of employment is whether the person has worked at least one hour in the week of reference or was not working but had a job from which the individual was temporarily absent.

We should not conclude however that employment is a perfect measure especially for those groups at the margin between employment and inactivity. For instance Labour force surveys, following recommendations by ILO, consider government schemes and on the job training programmes as included in the employment status. The measure of these schemes and the exact classification of a training programme as being on the job as opposed to be in education is sometimes difficult. More generally the exact classification between school and employment is not always consistent across country and across time. When the UK LFS was started, individuals were first asked whether their main activity was full-time education and if not they were not considered employed, even if they had a job. Later the questions were changed to incorporate ILO recommendations of measuring any kind of employment whatever the education status.

### 2.2 The intensive margin

The intensive margin, i.e. annual hours of work for those in work, is much harder to measure consistently. International efforts to come up with comparable estimates have lagged behind those put in place for the measure of employment. The recommendation from ILO to use annual hours actually worked dates only from fall 2008 (Fleck 2009) and historical series are fraught with concerns.

There are two main ways to compute annual hours of work from Labour Force surveys. The first consists in using the *actual hours* of work in the reference week (which will be zero if on leave). If the reference week is representative of the year in terms of pattern of work and if there are no bias in the response rate for those on leave, then this methodology yields a good estimate. For recent years, with continuous surveys over the entire year, the annual average actual hours of work is therefore considered relatively reliable. However, given that most surveys have started as annual surveys, generally in spring to maximize the availability

of workers, the historical actual hours of work series will overestimate the weeks worked in the year, as summer and Christmas leaves are not included. This will be particularly important in countries with long holidays like France.

The alternative approach consists in using the *usual hours* of work declared in the survey and another measure of the number of weeks worked during the year, using various measures of days on leave (holidays, maternity leave, sickness leave etc.). The latter is only rarely available in Labour Force surveys, which explains the recourse to establishment or administrative data. It is worth stressing here that the number of weeks worked per year is very difficult to measure as there is simply no data available.

### 2.3 Our estimations

Our main estimates of employment and hours worked rely on the continuous surveys (available since 1976 in the US, 1992 in the UK and 2002 in France). We measure employment and hours as the annual average of the weekly measure. As such our estimates are likely to overestimate the hours worked annually by individuals who work only part of the year.

For earlier years, when continuous surveys are not available, we use actual hours of work for the US and the US and we make an adjustment for the two series. In the case of France we use usual hours of work up to 2002 and we obtain an annual average by multiplying by an estimate of the number of weeks worked in 2002. We compute this number of weeks worked by age, sex, employment status, marital status and number of children by comparing for each cell the average usual hours of work in the annual survey and the annual actual hours of work. This estimate is likely to be biased downward for earlier years when the number of weeks worked is likely to have been higher than in 2002.

## References

- Blundell, R., Bozio, A. & Laroque, G. (2011), 'Extensive and Intensive Margins of Labour Supply: Working Hours in the US, UK and France', *IFS Working paper* (W11/01).
- Fleck, S. (2009), 'International comparisons of hours worked: an assessment of the statistics', *Monthly Labor Review* .